

wherein the magnesium spinel comprises between 68% and 81% of the binder by dry weight, and the calcium aluminates are essentially made of CA and CA₂, with C=CaO and A=Al₂O₃, and comprise between 19% and 32% of the binder by dry weight.

--22. (new) The binder according to claim 21, comprising by dry weight of the binder, 71 ± 2% of magnesium spinel, 18 ± 2% Ca and 11 ± 2% CA₂.

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Const* --23. (new) The binder according to claim 21, which is substantially free from free residual MgO, at least as can be observed upon X-ray diffraction spectrum for the binder.

--24. (new) The binder according to claim 21, having the following chemical composition by dry weight of the binder:

- lime CaO : 4 to 12%
- magnesia MgO : 19 to 23%
- alumina Al₂O₃ : 69 to 74%.

--25. (new) The binder according to claim 21, having the following chemical composition by dry weight of the binder:

- lime CaO : 8.4%
- magnesia MgO : 20.4%
- alumina Al₂O₃ : 71.2%.

--26. (new) The binder according to claim 21, further comprising a SiO₂ content of less than 0.5% of the binder by dry weight.

--27. (new) The binder according to claim 21, having a Blaine area surface at least equal to 3000 cm²/g.

--28. (new) A method of using a binder according to claim 21 for producing a refractory concrete.

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--29. (new) A method of using a binder according to claim 28, wherein said binder includes magnesium spinel in an amount between 20% and 30% of magnesium spinel by dry weight of the concrete.

--30. (new) A method of using a binder according to claim 28, wherein the concrete is produced by mixing by dry weight of the binder:

- between 16 and 27% of the binder,
- between 2 and 13% of fine reactive alumina,
- between 0 and 19% of large spinel, and
- between 52 and 71% of alumina graulats.

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--31. (new) A method of using a binder according to claim 28, wherein said binder is used in the manufacture of steel ladles (1) for wear linings (5) of such steel ladles (1).

--32. (new) A process for producing a binder according to claim 21, wherein said binder is made through frittering by burning of a blend of raw materials comprising dolomite, alumina and magnesia.

--33. (new) A process according to claim 32, wherein said dolomite is natural.

--34. (new) A process according to claim 32, wherein said alumina is metallurgical.

--35. (new) A process according to claim 32, wherein said magnesia is reactive and has a grain size less than 100 μm .

--36. (new) A process according to claim 32, wherein the raw materials are, before burning, milled up to a grain size corresponding to a 2% maximum rejection on a sieve of 65 μm .

--37. (new) A process according to claim 32, wherein said burning is carried out at a temperature comprised between 1400°C and 1600°C.